

**NATIONAL WEATHER SERVICE
PRODUCT DESCRIPTION DOCUMENT (PDD)
TYPE: Enhancement to Official Product
DATE: March 14, 2014**

Enhancements to the Special Marine Warning and Marine Weather Statement products to Add Experimental Waterspout coding to Great Lakes, and to align existing hail and wind tags with the consistent format used in Severe Thunderstorm Warnings.

Part 1 – Mission Connection

a. Product Description - Special Marine Warnings are issued on the Great Lakes to provide detailed information to the Marine Community for the protection of life and property. Special Marine Warnings are issued for Great Lakes marine zones to provide advance notice to mariners of potentially hazardous weather conditions. These warnings are issued for both imminent and forecast hazards; and may be based on observed or radar indicated conditions.

Special Marine Warnings are issued for short periods, generally less than 2 hours, and for sustained marine thunderstorm winds exceeding 34 knots and/or hail of $\frac{3}{4}$ inches or greater and/or waterspouts. Special Marine Warnings are also issued for non-convective short duration winds or gusts of 34 knots or greater.

NWS Central Region offices have issued Special Marine Warnings (SMW) and Marine Weather Statements (MWS) with tags for hail and wind as an operational product format since 2010. The purpose of this PDD is to change how these hail and wind tags are encoded to bring them into conformity with how they are done within the Severe Thunderstorm Warning product, and to introduce a new tag to help users better identify the potential threat from waterspouts.

b. Purpose - the purpose of this experiment is to improve the communication of crucial decision support and risk assessment information to partners and users within the guidelines of governing policy and the existing operational environment. The National Weather Service Offices provide warnings for the marine zones and the methodology and format will remain consistent with existing short fused marine and land-based warnings. This proposal brings the existing hail and wind tags into alignment with consistent formatting within the Severe Thunderstorm Warning product over land-based zones, and to introduce a new tag labeled "WATERSPOUTS..." to help users more quickly identify the risk for waterspouts within the text of the warning product. The warnings will also include streamlined, standardized, concise bullets to convey information about associated impacts, specific hazards expected, and recommended action resulting in an improved public response to take immediate protective action.

c. Audience - the target audience for the product includes: mariners, national, state and local emergency managers; media partners; the private weather enterprise; government and military agencies; and the general public. This change will affect Special Marine Warnings and Marine Weather Statements issued on Lake Superior, Lake Michigan, and Lake Huron.

d. Presentation Format - wording concerning impacts, specific hazards and source of information which prompted the warning will be inserted into the text area beneath the third mandatory bullet (immediately following the time, location and motion of the storm). A list of "recommended action" phrases will be selectable in the WarnGen GUI. The selection will be inserted into the mandatory section labeled "PRECAUTIONARY/PREPAREDNESS ACTIONS". Relevant tags for Waterspouts, Hail and Wind will be automatically appended to the bottom of Special Marine Warnings (SMW) and follow-up statements (MWS) issued by all participating offices

e. Feedback Method - web feedback from the broader community will be gathered via NWS customer survey <http://www.weather.gov/survey/nws-survey.php?code=WSCGL> from May through November, beginning Thursday, May 1, 2014 until November 30, 2014.

Comments may also be provided to:

Brian Hirsch
Central Region Marine Services Program Manager
7220 NW 101st Terrace
Kansas City, MO 64153
816-268-3149
Email: brian.hirsch@noaa.gov

Part 2 – Technical Description

a. Format & Science Basis - the proposed Enhancement will add up to three additional text lines of text to describe three hazards: wind, hail, and waterspout. Hail and wind tags already exist within these operational products; this enhancement will simply take them from being on the same line of text and break them into separate lines of texts as per the example below.

The coded tag lines appended to the bottom of every SMW and MWS products after the double ampersand (&&) directly below the existing TIME...MOT...LOC line and before the double dollar sign (\$\$). The hazards will be added each on a single line, if applicable, justified to the left margin, in the order as follows:

WATERSPOUT...<descriptor>
HAIL...xxxIN
WIND...xxKTS

Allowable Coded Tag Line Values

The allowable values for hail and wind tag lines are coded and defined as follows:

Waterspout Values for SMW and MWS

WATERSPOUT...OBSERVED
WATERSPOUT...POSSIBLE

Hail values for SMW/MWS

(Local office flexibility to add other events in 1/4 inch increments with <.75 being the lowest allowable value, other than "no hail", and >2.0 being the largest allowable value. Format of these hail tags would be as "x.xx" (i.e., 1.00, 1.25, 1.50, 1.75.)

0.00 Equates to no hail

- <.75 Equates to hail smaller than 0.75 inches in diameter
- >.75 Equates to hail 0.75" inch or larger, but less than 2 inches in diameter
- >2.0 Equates to hail 2 inches or larger in diameter and is the highest allowable value

Wind Values for SMW/MWS

(local office flexibility to add 60 for 60 knots)

- <34 Wind gusts below 34 knots, and lowest allowable value
- 40 40 knot peak wind gust
- 49 40-49 knot peak wind gusts
- 50 50 knot wind gusts (severe)
- 65 65 knot peak wind gust and is the highest allowable value

Additional focus will also be added to the third bullet and a break out will be provided for HAZARD, SOURCE, and IMPACT in that bullet. This additional delineation is similar to land-based short fused warning products and within the language of the current directives.

b. Availability - This enhanced product is available through all distribution channels which currently disseminate SMW and MWS warning products.

c. Additional Information – Example of SMW product

```
WHUS53 KDTX 011530
SMWDTX
LCZ123-011700-
/O.NEW.KDTX.MA.W.0001.140701T1530Z-140701T1700Z/
```

```
BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE DETROIT/PONTIAC MI
1130 AM EDT TUE JUL 1 2014
```

THE NATIONAL WEATHER SERVICE IN DETROIT/PONTIAC HAS ISSUED A

* SPECIAL MARINE WARNING FOR...
ST. CLAIR RIVER...

* UNTIL 100 PM EDT

* AT 1128 AM EDT...A LINE OF SEVERE THUNDERSTORMS...CAPABLE OF PRODUCING
WATERSPOUTS...WAS LOCATED FROM 10 NM NORTHWEST OF NEW BALTIMORE TO
GROSSE POINTE...MOVING EAST AT 40 KNOTS.

HAZARD...A WATERSPOUT...WIND GUSTS TO 40 KNOTS AND LARGE HAIL.

SOURCE...RADAR INDICATED.

IMPACT...OVERTURNED AND CAPSIZED BOATS.

* THE WATERSPOUT WILL BE NEAR...
MARINE CITY AROUND 1000 AM EDT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MARINERS CAN EXPECT DANGEROUS WINDS IN EXCESS OF 40 KNOTS...HIGH
WAVES...DANGEROUS LIGHTNING...AND HEAVY RAINS. BOATERS SHOULD SEEK
SAFE HARBOR IMMEDIATELY...UNTIL THESE STORMS PASS.

&&

LAT...LON 4298 8242 4261 8252 4261 8253 4276 8248
4294 8245

TIME...MOT...LOC 1400Z 263DEG 40KT 4284 8289 4244 8291

WATERSPOUT...POSSIBLE

HAIL...>.75IN

WIND...40KTS

\$\$

NAME